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THE UNIVERSITY OF ALBERTA

THE RELATIONSHIP OF BROKEN HOMES
TO THE PERFORMANCE OF SCHOOL CHILDREN

by
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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
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The undersigned hereby certify that they have read and recommended to the Faculty of Graduate Studies for acceptance, a thesis entitled "The Relationship of Broken Homes to the Performance of School Children" submitted by Joseph North in partial fulfillment of the requirements for the degree of Master of Education.

ABSTRACT

This study was designed to test the hypotheses that, over and above social class membership, achievement, attendance, and the degree of deviant behavior are in part a function of whether the home is, or is not broken. The age of the child at the time of break up and the nature of the disruption were taken into consideration.

The data were collected by means of a student questionnaire, teacher ratings, and pupil cumulative records. A group of one hundred and thirty-one grade seven and eight students from broken homes and an equal number of students from intact homes were selected in the Edmonton Public School System as a sample for this study.

The criterion variables were scholastic achievement, school attendance, and deviant behavior. Socio-economic status was the co-variable while sex of student, sex of parent, time of break up, nature of break up, status of the home, as well as additional interaction vectors, formed the predictor variables.

Linear Multiple Regression Analysis was used. This technique made use of vector notation and was well suited to computer operations.

The significant findings in this study were as follows: (1) Students from broken homes attend school

fewer days in grade six than students from intact homes. (2) Students from fatherless homes score lower in scholastic achievement than students from motherless homes. (3) The crucial period for family disruption is when the child is in the primary grades.

This last finding was made in connection with achievement by fatherless home children. The finding has various implications with regard to children in the primary grades. Apparently these children are more readily influenced in their character formation than are children of any other age group. The influencing factors may be certain happenings either at home or at school.

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CHAPTER I

INTRODUCTION

The incidence of broken homes is greater than commonly realized. Bossard and Boll (1960) state that the number of women reported annually as separated in Current Population Reports of the United States Federal Bureau of Census for the 1950's varies from one million to one and one-half million. The number of children involved in these cases is not known but the 1955 census for the women reported as separated in that year in the United States shows that 27 per cent had no children, 45 per cent had one or two, and 28 per cent had three or more.

Admittedly these enumerations are incomplete, they represent the facts only as of a single year, and they do not include other forms of marital separation such as desertion and prolonged absences of spouse under various pretexts without having reached an explicit agreement for separation or divorce. Although it is difficult to obtain Canadian figures, it is very likely that they would also indicate a large number of children in broken homes.

Studies on delinquency (Gleuk and Gleuk, 1952; Kvaraceus, 1959) have revealed that children from broken homes tend to exhibit maladjusted performance in our society. Therefore, with the incidence of broken homes

as large as it is, we cannot afford to neglect any evidence or further research which could aid social workers, school teachers, and administrators in assisting children from broken homes to become better adjusted and more productive citizens.

THE PROBLEM

Since the majority of studies of broken homes are concerned chiefly with delinquency, there is a lack of scientific studies concerning the effect of broken homes on school performance.

Apparently, as indicated by a number of writers, there are a few relevant considerations that merit attention. These are: (1) the sex of the persons involved, (2) the nature of the break up, and (3) the age of the child at the time of the disruption.

Consequently, the present study is concerned with the problem of determining the extent of the influence that the absence of a parent has on a child's school performance. More particularly, this study is designed to test the hypotheses that, over and above social class membership, achievement, attendance, and the degree of deviant behavior are in part a function of whether the home is, or is not, broken. Furthermore, the age of the child at the time of the break up and the nature of the disruption, often omitted from previous studies, are taken into consideration.

A number of studies indicate that conflict and general instability are responsible for poorer performance regardless of whether or not the home is broken (McCord, McCord and Thurber, 1962).

DISCUSSION OF THE PROBLEM

The problem of a disorganized home has been described most appropriately by Wattenberg (1955) where he states that

. . . a youngster who has lost one or both parents is faced by special problems. For example, if there is no man in the household, a boy must find in his life an adult male to serve him as a model of manhood. Similarly, a girl who has lost her mother must find a woman from whom to copy feminine roles. Likewise, if his mother is missing a boy may lack an appreciation of women; a girl with no father may find her later adjustment to men impaired. In most cases the missing relationship is supplied by other adults, but now and then the solution is not adequate to prevent some impairment (1955, p. 187).

The importance of identification in influencing the development of the child is also stressed by other investigators (Martin and Stendler, 1959; Lynn and Sawrey, 1959; Goode, 1956).

Theoretically, as a result of not having adequate models to identify with, children from broken homes tend to perform poorer in several areas, three of which are included in the present investigation. In the first place, a number of studies[★] (Russell, 1957; Kvaraceus, 1945; Gleuk and Gleuk, 1952; McCord, 1962) indicate that broken

[★]See Chapter II for details of the various studies.

home children are more deviant in their behavior than children from intact homes.

Secondly, poor school attendance is frequently associated with broken homes (Burchinal, 1964).

The third area often influenced negatively by broken homes is scholastic achievement. This is indicated by the studies of Curtis and Nemzak (1938) and Rouman (1956). The present study attempts to support the above findings.

In addition to broken homes having a poor influence in the three areas, namely; deviant behavior, school attendance, and scholastic achievement, there are several factors associated with broken homes which appear to affect the normal functioning of the child.

To begin with, the nature of the disorganization is a factor to be considered (Wattenberg, 1955). Frank and Frank (1956); Bossard and Boll (1960); and McCord, McCord and Thurber (1962), indicate that conflict broken homes tend to make the children more anxious than they would have been otherwise. A second factor in broken homes which seems to affect the child's performance is the age of the child at the time of the disruption (Monahan, 1960). Rouman (1956) and Mischel (1961) observe that the lack of an adult male affects younger children more than older ones.

Thirdly, the sex of the child as well as the remaining parent merits consideration. Taylor (1938),

Frank and Frank (1956), Martin and Stendler (1959), and Winch (1962) point out that girls, particularly in fatherless homes, seem to fare more poorly than boys. With regard to the sex of the remaining parent, Wattenberg (1955) and Martin and Stendler (1959) indicate that not only are there fewer motherless homes than fatherless homes, but the motherless homes are not disrupted to the degree that fatherless homes usually are. Finally, attention should be drawn to the socio-economic factor. Studies by Hollingshead (1949), Monahan (1957), and Burchinal (1964) provide evidence which reveals a high negative correlation between socio-economic class and the incidence of broken homes.

OPERATIONAL DEFINITIONS

Independent Variables

Status of the Family Institution:

Non-conflict broken home: A home in which one of the parents is missing, due to death.

Conflict broken home: A broken home precipitated by a conflict. In this study, conflict broken homes are those resulting from divorce, separation, and desertion.

Intact home: A home in which both parents are present.

Subject's age at break up: The subjects are divided

into three groups. The first division is made at the time when the child begins school. The second group includes students who were in grade one, two, or three; and the third group includes students who were in grade four, five, or six at the time of the family disruption.

Socio-economic status of the child's home: This is obtained by means of Elley's adaptation of Gough's Home Index Questionnaire. The score is primarily the relative position of a family on a continuum of possession-nonpossession of material goods.

Sex of the child and sex of the remaining parent: A dichotamous classification as male or female.

Dependent Variables

Attendance: The number of days attended by the student during the year in grade six as evidenced by the cumulative record.

Deviant behavior: A classification of whether the behavior of a child is very unfavorable, less unfavorable or favorable (see Appendix B). Two such estimates are used, one presently obtained from a member of the teaching staff and one based on the rating in the child's grade six cumulative record.

Achievement: This is determined by the grade score on the Edmonton Public School Unit Scale of Attainment Reading Test, Division II, Form B.

THE MAJOR HYPOTHESES

The socio-economic status co-variable is taken into account in each of the following hypotheses.

I. Status of the Home

A. Children from broken homes: (1) perform significantly lower on scholastic achievement, (2) attend school a significantly fewer number of days, and (3) manifest more serious deviant behavior than children from intact homes.

B. Children from conflict broken fatherless homes: (1) perform significantly lower on scholastic achievement, (2) attend school a significantly fewer number of days, and (3) manifest more serious deviant behavior than children from father deceased homes.

II. Age at Disruption

The younger the fatherless home child when the home was broken: (1) the lower the scholastic achievement in grade six; (2) the fewer the number of days attended in grade six, and (3) the more serious the manifest deviant behavior.

III. Sex

A. In fatherless homes, girls: (1) perform significantly lower in scholastic achievement,

(2) attend school a significantly fewer number of days, and (3) manifest more serious deviant behavior than do boys.

B. Fatherless home children: (1) perform significantly lower in scholastic achievement, (2) attend school a significantly fewer number of days, and (3) manifest more severe deviant behavior than do motherless home children.

THE EDUCATIONAL SIGNIFICANCE OF THIS STUDY

The results of the tests for the above hypotheses will have certain educational implications.

Since there is a lack of scientific research on the school performance of children from broken homes, a stigma may be attached to such youngsters, or on the other hand, the status of their homes may be overlooked altogether. Consequently, there is a need in our schools for reliable information concerning such areas and aspects as the present study attempts to explore.

Counsellors may find such information invaluable for identifying the problems of a broken home client and proceeding to help the child to overcome his problems.

Furthermore, teachers will have a better idea of what to look for in the child's background and what to expect from the child whose home was disrupted.

School administrators, particularly in areas where there is a high incidence of children from broken homes, will also benefit in that they will be better equipped to select the type of school personnel that will best attend to the welfare of these children.

CHAPTER II

REVIEW OF RELATED LITERATURE

Identification

As stated earlier by Wattenberg (1955) a child needs a parent of the same sex for a model from whom to copy sex roles and a parent of the opposite sex in order to aid his later adjustment to that sex. Goode (1956) also states that at every phase of childhood, the child needs the father, who is usually the absent parent, as an object of love, security, or identification. The above views are supported by Martin and Stendler (1959) who assert that

. . . the child must be in close contact with someone who has practical knowledge of right and wrong sex-typed behavior. When the father-son relationship is good, when the father is perceived by his son as a highly rewarding, affectionate person, the boy is likely to identify with the father (1959, p. 351).

The effects of father absence on boys and girls was investigated by Lynn and Sawrey (1959) in Norwegian sailor families where the father was absent for one or two years. Compared to otherwise similar Norwegian families of the same area, in which the father was present, the father-absent boys showed immaturity. Being insecure in their identification with the father, father-absent boys

showed stronger strivings toward father identification and compensatory masculinity. The father-absent children demonstrated poorer peer adjustment. Father-absent girls showed greater dependence on the mother than did father-present girls.

In some cases the child will identify himself with the estranged parent (Bossard and Boll, 1960).

This identification usually involves the parent of the opposite sex and, in early childhood, operates chiefly at the unconscious level. That is to say, the child's unconscious is identified with the unconscious of the parent. Because of this principal of psychological identification, the disturbing forces which lie below the level of conscious adult life are absorbed by the child. It is in this connection that the feelings of guilt, failure, apprehension, defeatism, bitterness and the like, which many divorced or separated mates develop, become so insidiously important in the development of their children (1960, p. 425).

It appears that children from broken homes, as a result of not having suitable models to emulate, may suffer in the development of their personality and subsequently in their overall performance.

Deviant Behavior and Attendance

One of the areas most frequently mentioned in connection with children from broken homes is that of deviant behavior. Russell (1957) made a study of one hundred and seventy-four Illinois children from broken homes and an equal group of children from intact homes

matched on the basis of age, sex, race, and intelligence quotient. He concluded that lying and stealing are more frequently observed in children from broken homes. Furthermore, he concluded that enuresis, extreme anger, and disobedience seem to be found more frequently among children from homes broken by divorce or separation than homes broken by death.

Repeated direct observations by McCord (1962) of boys aged ten to fifteen years over an approximate five-year period in a lower class deprived environment, resulted in the following findings in relation to behavior. Firstly, feminine-aggressive behavior appeared to be produced by paternal absence if the boy was between six and twelve years of age when the father left. Secondly, according to McCord, the relationship between criminality and parental absence appears to be largely a result of the general instability of broken homes rather than the absence of the parent.

Gleuk and Gleuk (1952) found that no fewer than six out of every ten of the homes of the delinquents in their study as compared with three in ten of the homes of the non-delinquents had been broken by separation, divorce, death or the prolonged absence of one of the parents. To this, Goldman (1961) adds that

. . . broken homes have been found in many studies to contribute more than their share of juvenile delinquents. The fact of coming from a broken home, therefore, is a datum which may be used in the estimation of delinquency-proneness (1961, p. 154).

Kvaraceus (1959) points out that studies on causes of delinquency that are based on court and institution cases carry a heavy built-in bias of the broken home because of a screening process in which a youngster from an intact home generally returns home or to a clinic, while the youngster from a broken home is placed in an institution. Therefore, such studies can be misleading.

Regarding performance in the area of school attendance, Burchinal (1964) reports a study of the effects of divorce upon grade seven and eleven students in Cedar Rapids, Iowa. Significant differences were demonstrated in the number of days absent from school by students from unbroken and broken homes. Adolescents from the unbroken homes were absent the fewest number of days.

Achievement

The third area of performance examined in the present investigation is scholastic achievement. Bossard and Boll (1960) emphasize that the disruption of a child's home life breaks the continuity of his emotional and intellectual development.

After all, what is involved is a crisis situation in the most intimate and sensitive aspect of his life, and reverberations that follow extend into every phase of his life. The continuity of his school life, and certainly the quality of his school work, are disturbed (1960, p. 426).

In their study of adolescents, Gleuk and Gleuk (1956) report that in the absence of one parent, the remaining parent often demands social and intellectual achievement far out of line with the youngster's age or abilities. This provokes hostility on the part of the child which in turn reactivates the cycle of parental demands, deeper misunderstanding, and greater revolt.

Wattenberg (1955) refers to a study which corroborates these views. Curtis and Nemzak (1938) investigated the effects of unsettled home conditions upon school performance of Detroit youngsters. They formed a group of fifty students whose fathers were dead; another group of fifty students whose fathers were divorced or separated. Similarly they formed groups where the mothers were dead, the mothers were divorced or separated, the father was unemployed or the mother was working. For each such group they obtained a group of fifty youngsters from undisturbed homes, matched as to intelligence quotient, age, and grade in school. These groups were then compared on the basis of their grades. In every comparison between broken homes and intact homes, the youngsters from broken homes had a poorer record.

Rouman (1956) claims that academic failure of elementary students that he studied in a Los Angeles County was greatest among children lacking an adult male in the home. Further indication of the importance of the

home environment for academic achievement is given by Gleuk (1952) where he states that

. . . it has been learned that rearing in an atmosphere of emotional tension between parents contributed to the development of extreme restlessness in children and had a bearing on limiting their verbal intelligence (1952, p. 122).

Conflict Broken Homes

So far consideration has been given to three areas of performance affected by the disruption of a home. Next, attention will be given to a few factors associated with disorganized homes which may be responsible for the variations in a child's functioning discussed thus far.

An important factor in the broken home which may influence the child's performance is the nature of the disorganization. Wattenberg (1955) explains that added

. . . to the emotions at the loss of a parent is the conflict in loyalties when there is a desertion, separation, or divorce. In the quarreling which precedes such happenings, children may hear parents charge each other with being responsible for the misconduct or bad traits of the children. When the final break is made, the children may often feel that they have been rejected or abandoned (1955, p. 190).

Bossard and Boll (1960) assert that internal conflict is the basic situation a broken home creates for a child. Ordinarily, a child has some emotional attachment to both parents, a feeling independent of what other persons think of the parents and of the parents' relations

with each other. When the parents separate, the child is forced to make a difficult decision, which he is unwilling and often unprepared to make. Problems thus created may be particularly difficult for older children who have an insight into the merits of the case and are also aware of their own economic necessities or personal advantages. Like the parent, the child carries the burden of a continuing awareness of his problems. At an early age the child senses the attitude of kinsfolk, friends, and the community. The moral condemnation of divorce attaches to him and makes his position more difficult than it would be otherwise.

McCord (1962) cites evidence which indicates that many of the effects often presumed to result from parental absence can largely be attributed to certain parental characteristics: intense conflict, rejection, and deviance, which occur more commonly in broken families.

In his study in River City, Havighurst (1962) found that social and personal maladjustment is closely related to dropping out of school and to under-achievement in school. He also found that children identified as maladjusted came typically from unstable families. His maladjusted groups had twice as high a proportion of homes broken by divorce or separation as was true of the rest of the population.

Age

Another factor which may affect the child's performance is his age at the time of the family disruption. Mischel (1961) tested the reactions to candy and money reinforcement by Trinidadian and Grenadian children. A significant relationship between absence of the father within the home and a greater preference for immediate, smaller reinforcement as compared to delayed larger reinforcement was found in both cultures using subjects aged eight to nine years. However, this relationship was not true for older subjects, aged eleven to fourteen years. Mischel concludes that these older subjects form trust behavior and expectancies outside the household with increasing age.

Even when a parent has been dead for some time, the full impact of the loss may not strike the youngster until adolescence. Crucial new problems, such as the establishing of a masculine or feminine role, may result in nostalgia, confusion, and a need for comfort (Frank and Frank, 1956).

Monahan (1960) claims that the age of the child at the time of the family disruption is a significant variable in the disorganization. He found that lack of proper training during the child's character forming years and broken homes were the most causal factors in

later delinquency. He also states that the most criminal careers have their inception in very early life. The longer the home is broken the more numerous the crimes. To this Gleuk (1956) adds that very young children subjected to uprooting experiences are more likely to become delinquents.

Kvaraceus (1949) also stresses the difference between the impact of the broken home on the first four or five years of the child's life as compared with the impact of breaks that occur later in life.

Sex

The sex of the child and the remaining parent is the third factor under consideration in this study. According to Martin and Stendler (1959) the loss of a mother typically affects a family differently than loss of a father. When the father is left with pre-school children, he usually continues in his role of breadwinner and brings in a new socializing agent to take over house-keeping duties and care of the children. This new agent serves as a substitute mother. If a father is absent, however, the mother may become both breadwinner and homemaker.

In his study of children in a Los Angeles County, Rouman (1956) pointed out that the elementary age child seems more affected by the lack of an adult male, with

younger girls less affected than younger boys, and older girls more affected than older boys.

Leichty (1960) gave the Blacky test to thirty-three male students who were separated from their fathers by overseas duty and to a control group of twenty-nine students. The separated group showed a higher frequency of strong Oedipal intensity, and a lower frequency of close identification with the father.

Frank and Frank (1956) observe that adolescent girls living with their mothers after a divorce become exceedingly hostile to their mothers and express, either openly or in disguised ways, strong feelings of resentment at being deprived of their father. In such cases, the girl idealizes the absent father, regardless of whether this is deserved or not, and feels that the mother has robbed her of her father, whom she acutely needs at this time to give approval and reassurance of her feminine role.

Further evidence of this need is provided by Taylor (1938) and Martin and Stendler (1959). Taylor states that

. . . the mother is valuable in setting the pattern and example of what it is to be a woman. It is particularly good for the daughter's development if the mother is happy in her woman's role. But it is the father who can best give her the needed assurance from an important member of the opposite sex that she is attractive and lovable (1938, p. 170).

To this Martin and Stendler (1959) add that when marital harmony exists in the home the daughter tries to be like

the mother so that the father will love her too. By serving as a reinforcer of a young girl's femininity, the father teaches her what it means to be a woman. When the father is absent an unsatisfied need may be created in the girl. Winch (1962) observes that in father-absent homes girls more frequently go outside the nuclear family for fulfillment of the socializing-educational function than in father-present homes.

The results of a survey by Stephens (1959), involving thirty-seven social workers, indicates that there is a significant tendency for fatherless homes to produce boys who are overtly feminine. Moreover this survey gave supporting evidence that mothers in fatherless homes are more sexually attached to the boys than those in intact homes. Martin and Stendler (1959) also report less aggression among boys from fatherless homes than among boys from homes in which the father is present.

Goode (1964) points out that in Western countries the father is rarely granted custody of the children. In addition he states that the social meaning of age differs for men and women, so that an older man may marry a younger woman, and because society almost never imposes celibacy on the widower, the widower is much more likely to remarry than the widow. In the United States about twice as many widowers as widows remarry during the first five years after their spouses die. This would partly

explain the greater incidence of broken home children living with mothers than with fathers.

Socio-Economic Status

The socio-economic status of the home is the final factor under consideration. Hollingshead (1949) found that broken homes are associated with low socio-economic status. Goode (1964) states that the relation between class positions and divorce is complex, and determined by many historical factors such as changes in laws and fees. He adds that by the early 1950's an accumulation of research had demonstrated an inverse correlation between class ranking and the divorce rate in the United States.

Burchinal (1964) agrees that considerable research documents the greater divorce rates among lower status families. He observes that

Other studies support the generalization of greater indications of personality disturbance among lower status children, their less active participation in organized activities at school or in the community, and their lower academic achievement (1964, p. 46).

Burchinal's (1964) study in Cedar Rapids, Iowa, gave the following distribution:

Hollingshead's Social Status Index	Unbroken Families		Mothers Only	
	No.	Per Cent	No.	Per Cent
High	267	21.7	10	7.9
Middle	389	31.6	40	31.7
Low	574	46.7	76	60.4

This distribution shows an inverse relationship between social status and the number of children living with mothers only.

In a study by Bayley and Schaefer (1960), previously developed ratings of maternal behavior, based on the records of a longitudinal growth study of fifty-six children, were analyzed according to the socio-economic status of the children's parents. In general, this analysis of observed maternal behavior confirms findings from other studies based on interviews about child-rearing practices. From the total group there was a tendency for the mothers of higher socio-economic status to be warm, understanding, and accepting, and for those of lower socio-economic status to be more controlling, irritable, and punitive. These tendencies were present both during the children's first three years and later at around nine to fourteen years of age. The differences were more evident for the mothers of girls. There was also a suggestion that higher status boy babies and lower status girl babies were more likely to be granted a measure of autonomy and freedom from maternal supervision.

CHAPTER III

THE PROCEDURE

The Sample

The subjects for this study were chosen from the grade seven and eight classes in five junior high schools in the Edmonton Public School System. The schools were selected from lower socio-economic areas.^{*} This was done so that all the students would have had a fairly uniform environment. Furthermore, low socio-economic areas have a high ratio of broken homes. The schools were chosen within the one system so as to have available the results of the same standardized test for nearly all of the students.

A questionnaire (see Appendix A) was administered to eight hundred and eighty-six students.^{**} It was found that a total of one hundred and sixty of these were from broken homes. Twenty-three of these broken home students were omitted because their cumulative records were incomplete and another six students from foster homes were omitted so as not to contaminate the data of the rest of the single parent broken home sample. The remaining one hundred and thirty-one students were matched with an equal number of intact home students. The matching was done only on the basis of equal numbers of the two samples.

^{*}These areas were selected by the general supervisor of junior high schools in the Edmonton Public School System.

^{**}
The author collected his data during the month of May, 1965.

An alphabetical systematic sampling technique was used to select the intact home control group.^{*} Firstly, this procedure entailed the arranging of the surnames of the intact home students of each class in alphabetical order. Next, a sample of intact home students from each class was selected at equal intervals to match the number of broken home students who were selected from the same class. Table I shows the distribution of the sample.

Measures Used^{★★}

Status of the family: Information as to whether the child lives with mother only, father only, or both parents was obtained from the questionnaire (see Appendix A).

Subjects age at break up: The questionnaire was also used to provide the information as to whether the child was pre-school, in grades one, two, or three, or in grades four, five, or six at the time of the disruption of the home.

Socio-economic status of the child's home: This was obtained by means of Elley's adaptation of Gough's Home Index Questionnaire (see Appendix A). The students' scores ranged from 0 to 19. See Table II.

^{*}See Cochran, page 206.

^{★★}An intelligence test was not used in this study because it is generally accepted that there is a close relationship between intelligence and socio-economic status. The high verbal content of most intelligence tests handicaps lower socio-economic status children.

TABLE I

 THE DISTRIBUTION OF THE STUDENTS USED IN THIS STUDY

(a) Broken HomesFatherless Homes

Time of Break Up	Conflict			Death		
	Boys	Girls	Total	Boys	Girls	Total
Pre-School	10	19	29	10	7	17
Grades 1 to 3	8	8	16	5	5	10
Grades 4 to 6	17	10	27	5	8	13
			<u>72</u>	+		<u>40</u> = 112

Motherless Homes

Time of Break Up	Conflict			Death		
	Boys	Girls	Total	Boys	Girls	Total
Pre-School	0	2	2	1	0	1
Grades 1 to 3	2	2	4	0	2	2
Grades 4 to 6	3	6	9	1	0	1
			<u>15</u>	+		<u>4</u> = <u>19</u>

 The total number of students from broken homes = 131

(b) Intact Homes61 boys + 70 girls = 131

Total 262

TABLE II
DISTRIBUTION OF SOCIO-ECONOMIC
STATUS INDEX SCORES

Socio-Economic Status [★]	Broken Homes	Intact Homes
19 - 20	1	0
17 - 18	4	1
15 - 16	5	9
13 - 14	12	20
11 - 12	15	23
9 - 10	30	28
7 - 8	22	26
5 - 6	25	18
3 - 4	12	5
0 - 2	5	1
Mean	8.5	9.4
S.D.	3.9	3.4

★A high score on the questionnaire indicated a high socio-economic status.

Deviant Behavior: Two estimates were used. (a) The first rating was based on how the child was behaving in grade seven or eight, depending on which grade he was in at the time of the present study. The rating was done by a member of the teaching staff who had close contact with the student. The rater's instructions (see Appendix B) provided for separating the students into three categories: very unfavorable, less favorable, and favorable behavior.[★] (b) The character summary at the end of grade six in the child's cumulative record was considered and rated by the author along the same criteria as the above mentioned behavior rating by the staff member.^{★★} (See Appendix C)

School Attendance: The number of days attended by the student during his grade six school year was obtained from the cumulative record.

Scholastic Achievement: The grade score on the Edmonton Public School Unit Scale of Attainment Reading Test, Division II, Form B, was used in this study.^{★★★} This test was administered at the end of grade six to all students

[★]The author was aware that there may be variations in rating from teacher to teacher, but with a large number of teachers the deviations would tend to average out.

^{★★}The second rating was carried out because there may have been a change in the child's behavior since grade six.

^{★★★}The Van Wageningen Unit Scale of Attainment Test of Reading Comprehension was the basis for this test.

and the resulting grade scores were recorded in the child's cumulative record.

This reading test was standardized on Edmonton school children in May, 1951.[★] Since that time it has been used in making decisions concerning promotions, grouping, and diagnoses. Although, due to changes in staff at the school board office, the reliability and validity coefficients could not be located, there were several indications from school administrators and teachers that the test is valid.^{★★}

An aggregate of scores making use of such tests as mathematics and science was not used because it was discovered that in some schools the marks recorded in the cumulative record were composite marks of mathematics or science standardized tests and the teacher's own evaluations, which could vary from teacher to teacher.

The use of a reading test for an estimate of achievement was supported by Coull's (1956) study which found that grade seven achievement in reading vocabulary and total reading was equal to the grade placement of the testees.

[★]See the Edmonton Public School System, Supplementary Manual Unit Scale Reading Tests.

^{★★}Research carried out by Mr. Farnam and staff at MacArthur School, the largest elementary school in Edmonton, gives indication of a high concurrent validity for the Edmonton Unit Scale Test as compared with the Iowa Reading Test.

THE METHOD

The names of both the broken home students and the intact home students were entered on a master sheet. Information regarding the sex of the child, the sex of the remaining parent, the nature of the disorganization (conflict or death), the child's age at the time of the break up, and the socio-economic index of the home were secured from the questionnaire and entered on the master sheet. Next, the information concerning the attendance of the child and the grade score on the reading test was transferred from the cumulative record to the master sheet. The author then took the cumulative record grade six character summaries, categorized these (see Appendix C), and entered the ratings on the sheet which contained the previously entered data.

In addition, the names of the students in the study were recorded by classroom on the behavior rating forms (see Appendix B), and the principals of the schools were then asked to have these grade seven and eight students rated by some member or members of the staff who had close contact with the children. After these forms had been completed and returned, the ratings were entered on the master sheet.

The total data from the master sheet were punched on to I.B.M. cards.

STATISTICAL ANALYSIS

The Multiple Linear Regression method, developed by Bottenberg and Ward (1963), was the technique chosen for analysis of the data in this study. This technique seeks to clarify whether or not a critical variable, when added to a linear expression, significantly reduces the criterion error sum of squares.

The general approach is to express a vector of criterion variable data as a linear combination of a set of predictor vectors:[★]

$$Y = a_1 x^{(1)} + a_2 x^{(2)} + a_3 x^{(3)} + \dots + e$$

where Y = vector of criterion variable data

$x^{(1)}, x^{(2)}, x^{(3)}, \dots$ = vectors of predictor variable data

a_1, a_2, a_3, \dots = unknown weights associated with the predictor vectors

e = error or residual vector.

The problem is to find a set of weights which minimizes the sum of squares of the elements of vector e . Weights selected in this way are called "least square weights."

[★]See Appendix D for a complete list of predictor vectors used in this study.

We wish to minimize:

$$\sum_{i=1}^N (e_i)^2 = (e_1)^2 + (e_2)^2 + (e_3)^2 + \dots + (e_n)^2$$

In order to test the hypotheses in this study, models such as those illustrated below were used.

Full Model

$$Y = a_0 u + a_1 x^{(1)} + a_2 x^{(2)} + a_3 x^{(3)} + a_4 x^{(4)} + e_F$$

Restricted Model

$$Y = a_0 u + a_1 x^{(1)} + a_2 x^{(2)} + e_R$$

where Y = criterion vectors

u = unit vector

$x^{(1)}$, $x^{(2)}$, $x^{(3)}$, and $x^{(4)}$ are the predictor vectors

a_0 , a_1 , a_2 , a_3 , and a_4 are least square weights associated with predictor vectors

e = error or residual vector.

The restriction, (omission of vectors $x^{(3)}$ and $x^{(4)}$ from the restricted model),^{*} serves as a basis for calculation of whether the data in vectors $x^{(3)}$ and $x^{(4)}$ have the effect of significantly changing the value of the criterion Y in the presence of vectors $x^{(1)}$ and $x^{(2)}$.

^{*}The number of vectors involved in placing a restriction on a model differ from hypothesis to hypothesis depending upon what was being tested.

The hypotheses are:

$\sum (e_F)^2 = \sum (e_R)^2$ which means that the error sum of squares obtained by using the full model is equal to the sum of squares obtained from the restricted model.

The test of the hypotheses involves computation of the F statistic.

$$F = \frac{q_2 - q_1 / (m_1 - m_2)}{q_1 / (N - m_1)} = \frac{R_F^2 - R_R^2 / (m_1 - m_2) \star}{1 - R_F^2 / (N - m_1 - 1)}$$

where q_1 = minimized error sum of squares obtained from an

attempt to express the observed values in

vector Y as a linear combination of an unre-

stricted set of predictors $\left[(e_F)^2 \right]$

q_2 = minimized error sum of squares obtained from an

attempt to express observed values in vector Y

as a linear combination of a restricted set of

predictors that express an hypothesis. $\left[(e_R)^2 \right]$

m_1 = numbers of unknown weights in full model

m_2 = numbers of unknown weights in restricted model

R_F^2 = Variance accounted for in the full model

R_R^2 = Variance accounted for in the restricted model

We are testing whether or not reduction in error sum of squares obtained from the full model is significantly greater than the sum of squares from the restricted model.

*See Bottenberg and Ward, page 126.

CHAPTER IV

RESULTS

I. Status of the Home^{*}

Hypothesis: A. (1) Children from broken homes perform significantly lower on scholastic achievement than children from intact homes.

The regression equations for this hypothesis were:

Full Model

$$\tilde{Y} = 61.26u + 1.04 x^{(12)} + 1.93 x^{(1)}$$

Restricted Model

$$\tilde{Y} = 62.70u + 0.99 x^{(12)}$$

where Y = the criterion, scholastic achievement score

u = unit vector

$x^{(12)}$ = socio-economic status co-variable

$x^{(1)}$ = 1 if child was from a broken home, zero otherwise.

For the hypothesis $a_1 = 0$, the following were noted:

$$R_F^2 = 0.0610 \quad R_R^2 = 0.0576 \quad F < 1.0 \quad \text{N.S.}^{**}$$

^{*}For each of the hypotheses, the socio-economic status co-variable was taken into account.

^{**}This means that the value for the F statistic was not significant. As a result the hypothesis was not supported.

Consequently, there was no significant difference in achievement between broken home children and those from intact homes. However, a significant sex difference was noted ($p < .05$). See 1 (b) Table III. Females scored .37 higher on their achievement grade scores than the boys.

Hypothesis A. (2). Children from broken homes attend school a significantly fewer number of days than children from intact homes.

The regression equations expressing this hypothesis were:

Full Model

$$\tilde{Y} = 186.23u + 0.24 x^{(12)} - 3.99 x^{(1)}$$

Restricted Model

$$\tilde{Y} = 183.50u + 0.32 x^{(12)}$$

where Y = the criterion, attendance

u = unit vector

$x^{(12)}$ = socio-economic status variable

$x^{(1)}$ = 1 if child is from a broken home, zero otherwise

For the hypothesis $a_1 = 0$, the following were noted:

$$R_F^2 = 0.0366$$

$$R_R^2 = 0.0104$$

$$F = 7.08$$

$$p < .01$$

Therefore, the hypothesis that there is a significant difference in attendance between broken home children and those from intact homes, was supported. Broken home children attended on the average 3.99 fewer days than children from intact homes.

TABLE III
RESULTS FOR HYPOTHESIS I.
A. STATUS OF THE HOME

Criterion	Model	Vectors	R ²	Signif- icance of R ²	F	Signif- icance level of F
A.						
1. Scholastic						
(a) Achievement	full	u,1,12 [*]	0.0610	.01	1.1	N.S.
	restricted	u, 12	0.0570	.01		
(b)	full	u,1-3,12	0.0754	.01	4.02	.05
	restricted	u,1,12	0.0610	.01		
2. School						
(a) Attendance	full	u,1,12	0.0366	.05	7.08	.01
	restricted	u, 12	0.0104	N.S.		
(b)	full	u,1-3,12	0.0366	.05	1.0	N.S.
	restricted	u, 12	0.0366	.05		
3. Deviant Behavior						
(a) (cum.rec.) Grade 6.	full	u,1,12	0.0142	N.S.	---	N.S.
	restricted	u, 12	0.0000	N.S.		
(b)	full	u,1-3,12	0.0450	.01	8.32	.01
	restricted	u,1,12	0.0142	N.S.		
(c)						
(teacher rating) Grade 7 or 8.	full	u,1,12	0.0280	N.S.	---	N.S.
	restricted	u, 12	0.0124	N.S.		
(d)	full	u,1-3,12	0.0458	.01	4.78	.05
	restricted	u,1,12	0.0280	N.S.		

^{*}See Appendix D for a complete list of predictor vectors.

The predicted average annual attendance (Y) for a grade six child from a broken home is:

$$\tilde{Y} = 186.26u - 3.99 x^{(1)} + 0.24 (9.1) = 184.45 \text{ days} \\ \text{(S.E.S.)}$$

The predicted average annual attendance (Y) for a grade six child from an intact home is

$$\tilde{Y} = 186.26u + 0.24 (9.1) = 188.39 \text{ days} \\ \text{(S.E.S.)}$$

Hypothesis A. (3). Children from broken homes manifest more serious deviant behavior than children from intact homes.

1. Cumulative record grade six rating

The regression equations were:

Full Model

$$\tilde{Y} = 2.85u - 0.002 x^{(12)} - 0.11 x^{(1)}$$

Restricted Model

$$\tilde{Y} = 2.77u - .0002 x^{(12)}$$

where Y = deviant behavior rating

u = unit vector

$x^{(12)}$ = socio-economic status co-variable

The R_F^2 was not significant ($R_F^2 = 0.0142$) therefore, the test with the restricted model was inappropriate.

There was no marked difference between the grade six rating of deviant behavior of broken home children and that of the intact home children. There was, however, a significant sex difference. See 3 (b) Table III. Females were .16 points more favorable than males.

2. The later (grade seven or eight) rating of manifest deviant behavior by the teaching staff.

The regression equations were:

Full Model

$$\tilde{Y} = 2.63u + 0.01 x^{(12)} - 0.13 x^{(1)}$$

Restricted Model

$$\tilde{Y} = 2.54u + 0.015 x^{(12)}$$

The R_F^2 was not significant ($R_F^2 = 0.0142$), therefore the test with the restricted model was inappropriate. A significant sex difference was also seen for this rating of deviant behavior. See 3 (d) Table III. Females were rated .14 points more favorable than males.

The hypothesis that children from broken homes manifest more serious deviant behavior than children from intact homes was not supported.

Hypothesis B. (1). Children from conflict broken fatherless homes perform significantly lower on scholastic achievement than children from father deceased homes.

The initial regression equations used, which expressed sex*nature of break up interaction, did not show a significant difference ($F = 2.3$).

The subsequent regression equations expressing this hypothesis were:

Full Model^{*}

$$\tilde{Y} = 59.2u - 2.54 x^{(4)} + 4.01 x^{(7)} - 9.38 x^{(10)} \\ + 0.39 x^{(11)} + 1$$

Restricted Model

$$\tilde{Y} = 59.2u - 2.54 x^{(4)} - 6.87 x^{(10)} + 3.10 x^{(11)} \\ + 1.35 x^{(12)}$$

where Y = scholastic achievement

u = unit vector

$x^{(7)}$ = 1 if the home was broken by conflict, zero otherwise.

$x^{(8)}$ = 1 if the home was broken due to the death of the father, zero otherwise.

$x^{(9)}$ = 1 if the child was pre-school when the home was broken, zero otherwise.

$x^{(10)}$ = 1 if the child was in grade one, two, or three at the break up, zero otherwise.

$x^{(11)}$ = 1 if the child was in grade four, five, or six at the break up, zero otherwise.

$x^{(12)}$ = socio-economic status co-variable.

For the hypothesis $a_7 = a_8$, the following were noted:

$R_F^2 = 0.1943$	$R_R^2 = 0.1796$	$F < 1.0 \quad \text{N.S.}$
------------------	------------------	-----------------------------

Consequently, there was no significant difference in scholastic achievement between children whose homes were broken by conflict and those whose homes were broken due to the death of the father.

Hypothesis B. (2). Children from conflict broken homes attend school a significantly fewer number of days than

^{*}Vectors $x^{(5)}$, $x^{(8)}$ and $x^{(9)}$ were deleted because of linear dependencies of the vectors.

children from father deceased homes.

The regression equations expressing interaction in this hypothesis were:

Full Model^{*}

$$\begin{aligned}\tilde{Y} = & 182.41u - 0.17 x^{(7)} - 1.27 x^{(9)} - 4.75 x^{(11)} \\ & + 0.00 x^{(19)} + 0.00 x^{(20)} + 1.79 x^{(21)} \\ & - 4.21 x^{(22)}\end{aligned}$$

Restricted Model

$$\begin{aligned}\tilde{Y} = & 180.60u + 0.36 x^{(2)} + 2.82 x^{(7)} - 0.94 x^{(9)} \\ & - 5.06 x^{(11)} + 0.41 x^{(12)}\end{aligned}$$

where Y = days attended by the child in grade six.

u = unit vector

$x^{(2)}$ = 1 if subject was a male, zero otherwise.

$x^{(3)}$ = 1 if subject was a female, zero otherwise.

$x^{(7)}$ = 1 if subject was from a conflict broken home, zero otherwise.

$x^{(8)}$ = 1 if subject was from a father deceased broken home, zero otherwise.

$x^{(9)}$ = 1 if child was pre-school when the home was broken, zero otherwise.

$x^{(10)}$ = 1 if child was in grade one, two, or three at the break up, zero otherwise.

$x^{(11)}$ = 1 if child was in grade four, five, or six at the break up, zero otherwise.

$x^{(12)}$ = socio-economic status co-variable

^{*}Vectors $x^{(2)}$, $x^{(3)}$, $x^{(8)}$, and $x^{(10)}$ were deleted due to the linear dependencies of the vector.

$$\begin{array}{rcl}
 x^{(19)} & = & x^{(2)} * x^{(7)} \\
 x^{(20)} & = & x^{(2)} * x^{(8)} \\
 x^{(21)} & = & x^{(3)} * x^{(7)} \\
 x^{(22)} & = & x^{(3)} * x^{(8)}
 \end{array}
 \left. \vphantom{\begin{array}{rcl} x^{(19)} \\ x^{(20)} \\ x^{(21)} \\ x^{(22)} \end{array}} \right\} \text{Interaction}$$

vectors of sex X
nature of break up

The R_F^2 was insignificant ($R_F^2 = 0.0435$), therefore, the test with restricted model was inappropriate.

This indicated that there was no difference in attendance due to the interaction (sex X nature of break up) and therefore no further calculations were carried out.

The hypothesis that children from conflict broken fatherless homes attend school a significantly fewer number of days than children from father deceased homes was rejected.

Hypothesis B. (3). Children from conflict broken homes manifest more severe deviant behavior than children from father deceased homes.

The regression equations expressing this hypothesis were:

1. Cumulative record grade six rating

Full Model^{*}

$$\begin{aligned}
 \tilde{Y} = & 2.89u + 0.00 x^{(2)} + 0.00 x^{(7)} - 0.16 x^{(10)} \\
 & - 0.01 x^{(12)} + 0.00 x^{(19)} - 0.28 x^{(20)} + 0.06 x^{(21)} - 0.01 x^{(22)}
 \end{aligned}$$

*Vectors $x^{(3)}$, $x^{(8)}$, and $x^{(9)}$ were deleted due to linear dependencies of the vectors.

Restricted Model

$$\tilde{Y} = 2.78u - 0.13 x^{(2)} + 0.18 x^{(7)} - 0.15 x^{(10)} \\ + 0.02 x^{(11)} - 0.11 x^{(12)}$$

2. Later (grade seven or eight) rating.Full Model^{*}

$$\tilde{Y} = 2.64u - 0.12 x^{(2)} + 0.00 x^{(7)} - 0.04 x^{(11)} + 0.01 x^{(12)} \\ - 0.01 x^{(19)} + 0.00 x^{(20)} + 0.00 x^{(21)} - 0.08 x^{(22)}$$

Restricted Model

$$\tilde{Y} = 2.60u - 0.10 x^{(2)} + 0.03 x^{(7)} - 0.04 x^{(11)} + 0.01 x^{(12)}$$

Where Y = rating of manifest deviant behavior

u = unit vector

$x^{(2)}$ = 1 if subject was a male, zero otherwise.

$x^{(3)}$ = 1 if subject was a female, zero otherwise.

$x^{(7)}$ = 1 if subject was from a conflict broken home, zero otherwise.

$x^{(10)}$ = 1 if the subject was in grade one, two, or three when the home was broken.

$x^{(11)}$ = 1 if the subject was in grade four, five or six when the home was broken.

$x^{(12)}$ = Socio-economic status co-variable.

$x^{(19)} = x^{(2)} * x^{(7)}$

$x^{(20)} = x^{(2)} * x^{(8)}$

$x^{(21)} = x^{(3)} * x^{(7)}$

$x^{(22)} = x^{(3)} * x^{(8)}$

Interaction vectors of
sex X nature of break up

^{*}Vectors $x^{(3)}$ and $x^{(8)}$ were deleted due to linear dependencies of the vectors.

It was noted that the R_F^2 's, for each of the deviant behavior ratings, were insignificant. (Grade six rating $R_F^2 = 0.0821$ and the later rating $R_F^2 = 0.0153$.) Therefore, the test with the restricted model was inappropriate.

The hypothesis that children from conflict broken homes manifest more deviant behavior than children from father deceased homes was rejected.

There was no significant F statistic value for any of the hypotheses I (B) in which conflict broken homes were compared with father deceased homes.

II. Age at Disruption^{*}

Hypothesis (1). The younger the fatherless home child when the home was broken, the lower his scholastic achievement in grade six.

The regression equations expressing this hypothesis were:

Full Model

$$\tilde{Y} = 59.97u + 0.00 x^{(9)} - 6.87 x^{(10)} + 3.11 x^{(11)} + 1.35 x^{(12)}$$

Restricted Model

$$\tilde{Y} = 59.80u + 1.31 x^{(12)}$$

where Y = scholastic achievement

u = unit vector

^{*}The socio-economic status co-variable was taken into account for each of the hypotheses.

$x^{(9)} = 1$ if subject was pre-school when the home was broken, zero otherwise.

$x^{(10)} = 1$ if subject was in grade one, two, or three at the time of break up, zero otherwise.

$x^{(11)} = 1$ if subject was in grade four, five, or six at the time of break up, zero otherwise.

$x^{(12)} =$ socio-economic status co-variable.

For the hypothesis $a_9 = a_{10} = a_{11} = a_c$, the following were noted:

$R_F^2 = 0.1972$	$R_R^2 = 0.1156$	$F = 5.51$
$p < .01$	$p < .01$	$p < .01$

This indicated that there was a significant difference in scholastic achievement due to the fatherless children's home being broken when the children were at different age levels.

The hypothesis that the younger the fatherless home child when the home was broken, the lower his scholastic achievement in grade six was not supported.

However, Figure 1 indicates that the relationship between scholastic achievement and time of break up is curvilinear rather than linear, with the interval grades one to three being the crucial period for the child.

Hypothesis (2). The younger the fatherless home child when the home was broken, the fewer the number of days attended in grade six.

The regression equations expressing this hypothesis were:

RELATIONSHIP BETWEEN SCHOLASTIC ACHIEVEMENT AND THE TIME OF BREAK UP OF THE HOME

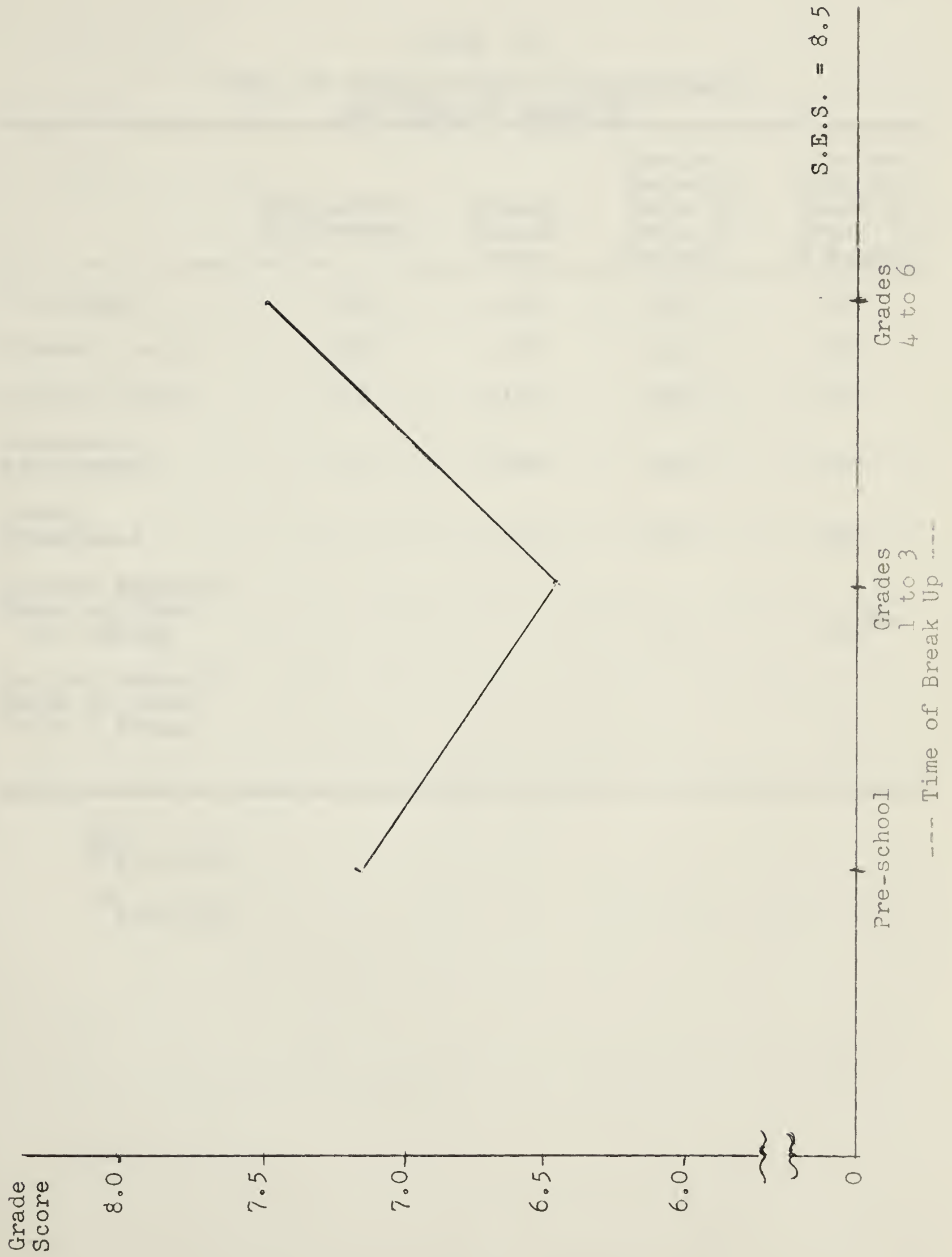


FIGURE 1

TABLE IV
TABLE OF CORRELATIONS FOR PERFORMANCE
AND TIME OF BREAK UP

	Scholastic Achievement	School Attend- ance	Deviant Behavior Based on Grade 6 Rating	Deviant Behavior Based on Grade 7 or 8 Rating
Pre-School	.016	.063	.053	.027
Grades 1 to 3	-.218 [*]	.080	-.134	.019
Grades 4 to 6	.176	-.135	.063	-.045
Scholastic Achievement	---	-.020	.149	.137
School Attendance		---	.031	.022
Deviant Behavior Based on Grade Six Rating			---	.385 ^{**}
Deviant Behavior Based on Grade 7 or 8 Rating				---

^{**} $p < 0.01$

^{*} $p < 0.05$

Full Model^{*}

$$\tilde{Y} = 178.32u + 0.00 x^{(2)} + 1.98 x^{(7)} + 0.43 x^{(10)} + 0.27 x^{(12)} \\ + 0.74 x^{(13)} + 7.64 x^{(14)} - 0.29 x^{(15)} + 5.17 x^{(16)} - 1.40 x^{(18)}$$

Restricted Model

$$\tilde{Y} = 180.60u + 0.36 x^{(2)} + 2.82 x^{(7)} - 0.94 x^{(9)} - 5.06 x^{(11)} \\ + 0.41 x^{(12)}$$

where Y = number of days attended in grade six.

u = unit vector

$x^{(2)}$ = 1 if the subject was male, zero otherwise.

$x^{(7)}$ = 1 if the subject came from a conflict broken home, zero otherwise.

$x^{(9)}$ = 1 if the subject was pre-school when the home was broken, zero otherwise.

$x^{(10)}$ = 1 if the subject was in grade one, two, or three when the home was broken, zero otherwise.

$x^{(11)}$ = 1 if the subject was in grade four, five or six when the home was broken, zero otherwise.

$x^{(12)}$ = socio-economic status co-variable.

$x^{(13)} = x^{(2)} * x^{(9)}$

$x^{(14)} = x^{(2)} * x^{(10)}$

$x^{(15)} = x^{(2)} * x^{(11)}$

$x^{(16)} = x^{(3)} * x^{(9)}$

$x^{(18)} = x^{(3)} * x^{(11)}$

Interaction vectors of
sex X time of break up

^{*}Vectors $x^{(3)}$ and $x^{(8)}$ were deleted due to linear dependencies of the vectors.

The R_F^2 was insignificant ($R_F^2 = 0.0569$) therefore the test of the hypothesis with the restricted model was inappropriate and as a result no further calculations were carried out.

The hypothesis that the younger the fatherless home child when the home was broken, the fewer the number of days attended in grade six was rejected.

Hypothesis (3). The younger the fatherless home child when the home was broken, the more serious the manifest deviant behavior.

The regression equations expressing this hypothesis were:

1. Cumulative record grade six rating.

Full Model^{*}

$$\tilde{Y} = 2.67u + 0.00 x^{(2)} + 0.17 x^{(7)} - 0.02 x^{(10)} - 0.04 x^{(12)} \\ - 0.06 x^{(13)} + 0.01 x^{(15)} + 0.18 x^{(16)} - 0.10 x^{(17)} + 0.18 x^{(18)}$$

Restricted Model

$$\tilde{Y} = 2.78u - 0.13 x^{(2)} + 0.18 x^{(7)} - 0.15 x^{(10)} + 0.02 x^{(11)} \\ - 0.01 x^{(12)}$$

2. Later (grade seven or eight) rating.

Full Model

$$\tilde{Y} = 2.54u + 0.00 x^{(2)} + 0.08 x^{(7)} + 0.01 x^{(11)} + 0.02 x^{(12)} \\ - 0.22 x^{(14)} - 0.27 x^{(15)} - 0.15 x^{(16)} + 0.04 x^{(17)}$$

Restricted Model

$$\tilde{Y} = 2.60u - 0.09 x^{(2)} + 0.03 x^{(7)} - 0.05 x^{(11)}$$

^{*}Vectors $x^{(3)}$ and $x^{(8)}$ were deleted due to linear dependencies of the vectors.

where Y = manifest deviant behavior rating.

u = unit vector

$x^{(2)}$ = 1 if the subject was male, zero otherwise.

$x^{(3)}$ = 1 if the subject was female, zero otherwise.

$x^{(7)}$ = 1 if the subject came from a conflict broken home, zero otherwise.

$x^{(10)}$ = 1 if the subject was in grade one, two, or three when the home was broken, zero otherwise.

$x^{(11)}$ = 1 if the subject was in grade four, five, or six when the home was broken, zero otherwise.

$x^{(12)}$ = socio-economic status co-variable.

$x^{(13)} = x^{(2)} \times x^{(9)}$	} — Interaction vectors of sex X time of break up
$x^{(14)} = x^{(2)} \times x^{(10)}$	
$x^{(15)} = x^{(2)} \times x^{(11)}$	
$x^{(16)} = x^{(3)} \times x^{(9)}$	
$x^{(17)} = x^{(3)} \times x^{(10)}$	
$x^{(18)} = x^{(3)} \times x^{(11)}$	

The R_F^2 's for each of the ratings were insignificant. (Grade six rating $R_F^2 = 0.0882$ and the later rating $R_F^2 = 0.0416$.) Therefore, the test with the restricted model was inappropriate and thus no further calculations were carried out.

The hypothesis that the younger the fatherless home child when the home was broken, the more serious the manifest deviant behavior was not supported.

III. Sex[★]

Hypothesis A. (1). In fatherless homes, girls perform

[★]As in the previous hypotheses, the socio-economic status co-variable was taken into account in these hypotheses.

TABLE V
RESULTS FOR HYPOTHESIS II
AGE AT DISRUPTION

Criterion	Model	Vectors	R ²	Signif- icance level of R ²	F	Signif- icance level of F
II. Scholastic						
1. Achievement	full	u, 9-12	0.1972	.01	5.51	p < .01
	restricted	u, 12	0.1156	.01		
2. School Attendance	full	u, 2-3, 7-18	0.0569	N.S.	---	N.S.
	restricted	u, 2-3, 7-12	0.0350	N.S.		
3. Deviant Behavior (Grade 6 Rating)	full	u, 2-3, 7-18	0.0882	N.S.	---	N.S.
	restricted	u, 2-3, 7-12	0.0729	N.S.		
Deviant Behavior (Grade 7 or 8 Rating)	full	u, 2-3, 7-18	0.0416	N.S.	---	N.S.
	restricted	u, 2-3, 7-12	0.0138	N.S.		

significantly lower in scholastic achievement than do boys.

A. (2). In fatherless homes, girls attend school a significant fewer number of days than do boys.

A. (3). In fatherless homes girls manifest more serious deviant behavior than do boys.

The regression models used to express hypotheses I (B) and II included interaction sex vectors. Since the R_F^2 s for these models were not significant, further calculations for determining sex differences were not necessary.

Consequently, the hypotheses III A. (1), (2), and (3) listed above, were not supported.

Hypothesis B. (1). Fatherless home children perform significantly lower in scholastic achievement than do children from motherless homes.

The regression equations expressing this hypothesis were:

Full Model

$$\tilde{Y} = 67.96u + 1.23 x^{(12)} - 7.48 x^{(4)}$$

Restricted Model

$$\tilde{Y} = 68.76u + 0.38 x^{(12)}$$

where Y = scholastic achievement score

u = unit vector

$x^{(12)}$ = socio-economic status co-variable.

$x^{(4)}$ = 1 if subject came from a fatherless home, zero otherwise.

For the hypothesis $a_4 = 0$, the following were noted:

$$R_F^2 = 0.1273 \quad R_R^2 = 0.0297 \quad F = 4.37$$

$$p < .05$$

There was a significant difference between the scholastic achievement of children from fatherless homes and from motherless homes. See Figure 2. The sex difference, however, was insignificant.

The hypothesis that fatherless children perform significantly lower in scholastic achievement than do children from motherless homes was supported.

Hypothesis B. (2). Fatherless home children attend school a significantly fewer number of days than do motherless home children.

The regression equations expressing this hypothesis were:

Full Model

$$\tilde{Y} = 183.57u + 0.35 x^{(12)} - 2.63 x^{(4)}$$

Restricted Model

$$\tilde{Y} = 181.31u + 0.35 x^{(12)}$$

where Y = number of days attended in grade six

u = unit vector

$x^{(12)}$ = socio-economic status co-variable.

$x^{(4)}$ = 1 if the subject came from a fatherless home, zero otherwise.

The R_F^2 was insignificant ($R_F^2 = 0.0129$) therefore, the test with the restricted model was inappropriate.

RELATIONSHIP BETWEEN SCHOLASTIC ACHIEVEMENT AND THE SEX OF THE REMAINING PARENT

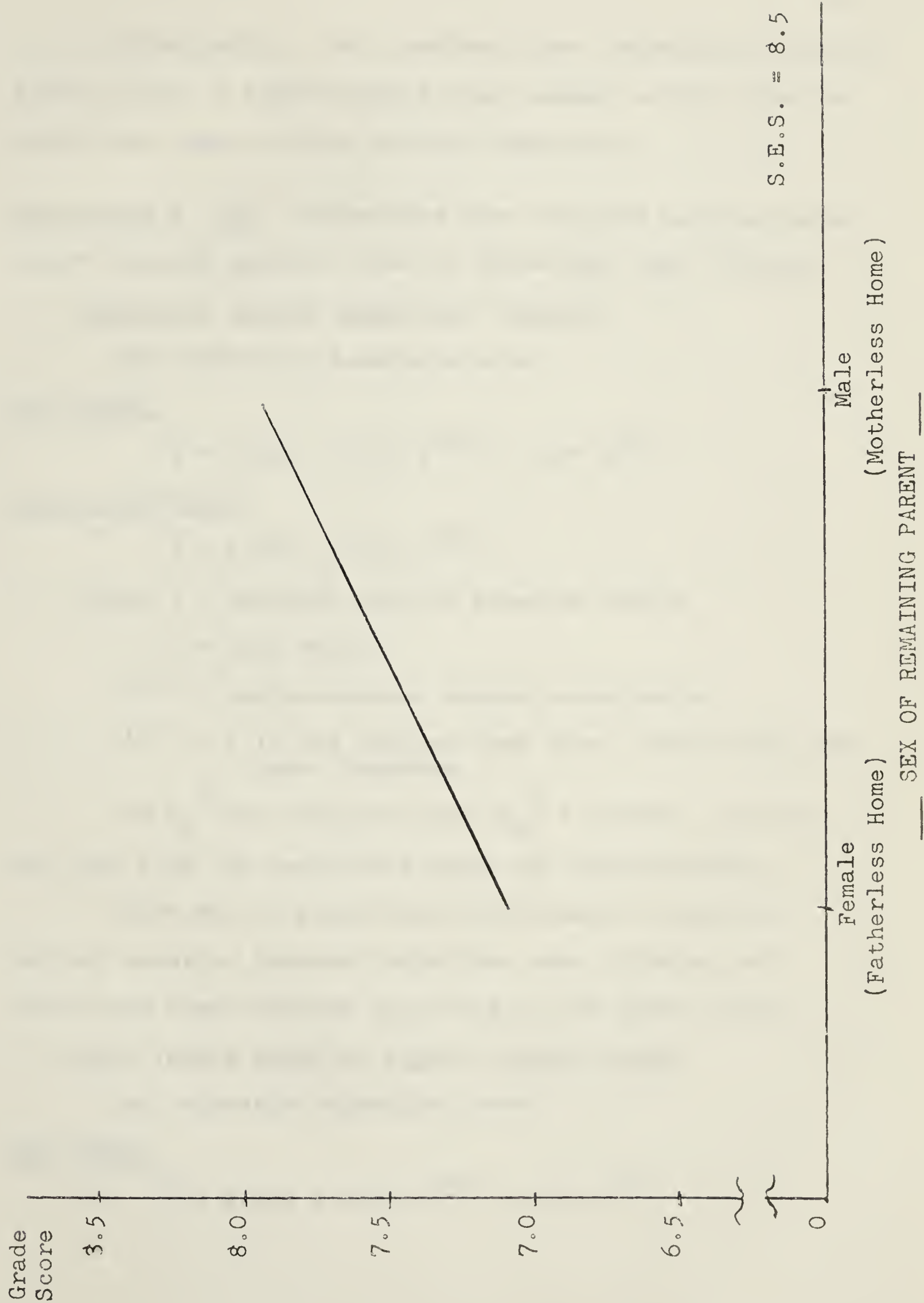


FIGURE 2

Consequently, the hypothesis that fatherless children attend school a significantly fewer number of days than do motherless home children was not supported.

Hypothesis B. (3). Fatherless home children manifest more severe deviant behavior than do motherless home children.

1. Cumulative record (grade six) rating.

The regression equations were:

Full Model

$$\tilde{Y} = 2.87u - 0.01 x^{(12)} - 0.08 x^{(4)}$$

Restricted Model

$$\tilde{Y} = 2.65u - 0.01 x^{(12)}$$

where Y = manifest deviant behavior rating

u = unit vector

$x^{(12)}$ = socio-economic status co-variable

$x^{(4)}$ = 1 if the subject came from a fatherless home, zero otherwise.

The R_F^2 was insignificant ($R_F^2 = 0.0085$) therefore the test with the restricted model was inappropriate.

There was no significant difference in manifest deviant behavior between fatherless home children and motherless home children according to the above rating.

2. Later (grade seven or eight) teacher rating

The regression equations were:

Full Model

$$\tilde{Y} = 2.32u + 0.01 x^{(12)} + 0.13 x^{(4)}$$

Restricted Model

$$\tilde{Y} = 2.50u + 0.01 x^{(12)}$$

where Y = manifest deviant behavior rating

u = unit vector

$x^{(12)}$ = socio-economic status co-variable

$x^{(4)}$ = 1 if the subject came from a fatherless home, zero otherwise.

The R_F^2 was not significant ($R_F^2 = .0250$) therefore the test with the restricted model was inappropriate.

As was the case with the previous rating, there was no significant difference in manifest deviant behavior between fatherless home children and motherless home children on the later rating.

The hypothesis that fatherless home children manifest more deviant behavior than do motherless home children was not supported.

TABLE VI
RESULTS FOR HYPOTHESIS III B, MOTHERLESS
HOMES VERSUS FATHERLESS HOMES

Criterion	Model	Vectors	R^2	Signif- icance level of R^2	F	Signif- icance level of F
III. B.						
1. Scholastic Achievement	full	u, 4-5, 12	0.1273	.01	4.37	.05
	restricted	u, 12	0.0297	N.S.		
2. School Attendance	full	u, 4-5, 12	0.0129	N.S.	---	N.S.
	restricted	u, 12	0.0088	N.S.		
3. Deviant Behavior (Grade six Rating)	full	u, 4-5, 12	0.0085	N.S.	---	N.S.
	restricted	u, 12	0.0052	N.S.		
Deviant Behavior (Grade 7 or 8 Rating)	full	u, 4-5, 12	0.0250	N.S.	---	N.S.
	restricted	u, 12	0.0073	N.S.		

CHAPTER V

CONCLUSIONS AND IMPLICATIONS

Conclusions

1. Children from broken homes attend school a significantly fewer number of days than children from intact homes. (Mean attendance for broken homes equals 184.4 days, for intact homes the mean attendance equals 188.4 days.)

2. In terms of later scholastic achievement, the crucial period for family disruption resulting in a fatherless home, is when the child is in the primary grades.

3. Fatherless home children perform lower on scholastic achievement than do motherless home children.

4. The findings concerning sex differences in broken homes are rather inconclusive in that the difference between the boys and girls in the fatherless home group is insignificant while the difference in the total group was significant in the areas of scholastic achievement and deviant behavior.

5. This study indicates that areas other than delinquency merit attention in the field of family disorganization.

Discussion

There are three important conclusions to be drawn from the results.

Firstly, the hypothesis that the status of the home makes a difference in the child's school attendance is supported in this study. Lacking a parent does apparently influence a child's presence at school.

The broken home group as a whole does not differ significantly from the intact home group in scholastic achievement. Even though there is no difference in scholastic achievement between the two groups in general, there is a difference between the intact home group and the broken home group depending upon the time of break up. Children from fatherless homes whose homes were broken when they were pre-school achieve approximately the same as the intact home group whereas those who were in the primary grades at the break up achieve significantly lower than the intact home students. On the other hand, children who were in grades four, five, or six when their homes were broken seem to achieve higher than the intact home group. It is not known whether some students from broken homes, because of the more disorganized atmosphere of the home, seek an escape by turning to their studies and thus maintain the achievement average for the rest of

of the broken home group. If such an escape does take place for some students, this is not the case for children who were in the primary grades at the time of the disorganization. This difference in achievement could possibly be investigated in subsequent research. With the exception of those children who were in the primary grades when their homes were broken, it seems that it is, in general, the socio-economic status variable and not the fact of whether or not the child comes from a broken home, that is more closely related to achievement.[★]

There was no significant difference in performance demonstrated between children from conflict broken fatherless homes and those from homes broken by the death of the father. In the area of scholastic achievement the conflict broken home group seem to have higher, although still insignificant, scores.

The status of the home does not appear to influence a child's deviant behavior. The limitation in this study is that there may not have been an adequate weighting of overt and covert behavior. A withdrawn child may be more of a problem case than a moderately mischievous child whose behavior is overtly displayed.

[★]The correlation between scholastic achievement and S.E.S. for the entire sample in this study was .2389, $p < .01$.

Secondly, the hypothesis comparing fatherless home children and motherless home children was supported in the area of scholastic achievement. Fatherless children perform significantly lower in scholastic achievement than do motherless home children. Although one must be careful in generalizing from this study because of the limited number of children from motherless homes, this finding does point out that the loss of a father affects the home differently than the loss of a mother. The difference between fatherless and motherless homes was not as pronounced in the areas of school attendance and deviant behavior.

Finally, the most noteworthy finding of this study was in connection with the hypothesis concerning the age of the fatherless home child at the time of the family disruption. As indicated earlier, the relationship between scholastic achievement and age at break up was statistically significant but, instead of being linear, was found to be curvilinear. An examination of the least squares weights in the linear multiple regression analysis model expressing this hypothesis showed that the scholastic achievement in grade six is retarded the greatest if the child's home was broken while he was in the primary grades. Apparently, grades one, two, and three are the crucial years in the child's life. It appears that at this age the fatherless home child is unable to make a satisfactory adjustment to

the school environment while trying to adjust to the disruption at home.

Limitations

There are certain limitations that must be kept in mind when generalizing from the conclusions in this study.

1. The study was limited by socio-economic status and location inasmuch as it dealt only with the performance of students in lower socio-economic areas in the city of Edmonton.

2. A single test was used to measure the scholastic achievement of the students in this study.

3. The validity and reliability coefficients of the test used to measure scholastic achievement were unknown.

4. The validity of the rating of deviant behavior with regard to the withdrawn children in this study was unknown.

5. An attempt was made to have the rating of deviant behavior as objective as possible by providing a rating guide for the teachers; however, the subjective nature of the evaluation may have influenced the results.

6. No comparison was made in this study between the performance of children from homes broken by divorce and those broken by separation or desertion.

7. The sample in this study was restricted to public school students. Separate schools may have fewer students from divorced homes.

8. No evidence was obtained as to how many of the children from intact homes had experienced the disruption of their home, followed later by the remarriage of the remaining parent.

9. The study did not take into account the influence of older siblings in the family who may have taken the place of the absent parent.

10. There was no evidence as to whether there was a permanent housekeeper in the motherless homes. Such a person could be a substitute mother.

11. Conflict in the home may have tended to influence the performance of the children. No attempt was made to measure the degree of conflict existing in the home.

Implications

The possible implications of the conclusions of this study merit attention.

1. The findings indicate that the age of the child at the break up of his home does have an effect on certain aspects of his later performance. This implies that counsellors may need to explore this aspect of the child's background during the therapy sessions in order

to better assist the youngster.

2. Staff personnel in schools need to be aware of the difference between children from fatherless homes and those from motherless homes. The results of this study indicate that there is a difference in scholastic achievement between these two groups.

3. There appears to be a need for greater understanding on the part of teachers toward children whose homes were broken while they were in the primary grades.

4. Since primary grade children who lose a father seem unable to adjust satisfactorily in school, other suitable male identification models are necessary for the child in order that he progress satisfactorily.

Recommendations for School Practice

The conclusions drawn from the findings in this study lead to the following recommendations with regard to school policies:

1. That schools and systems make an effort through surveys and research to determine what the broken home situation is within their particular locale.

2. That school boards give serious consideration to employing more male teachers in grades three to six inclusive not only to serve as identification models for personality formation, but to help the children build a desire for task mastering and intellectual competence.

3. That school boards hire special personnel such as counsellors and visiting teachers who can assist elementary teachers with broken home children who have difficulty in adjusting satisfactorily in school.

4. That principals and superintendents give leadership in instituting a general staff awareness of the particular areas of school performance in which some broken home students differ from students from intact homes.

5. That school personnel co-operate closely with social welfare workers in assisting students from broken homes to cope with their increased problems which result from the disruption of the home.

6. That more pre-service and in-service training for teachers and counsellors be provided in order to help them handle the diagnostic and therapeutic treatment of maladjusted students from broken homes.

Suggestions for Further Research

1. A study is recommended to determine to what extent a child's character formation is affected during the primary grade period as compared to the pre-school period.

2. It is recommended that a study be carried out to determine whether the lower scholastic achievement by

fatherless home children who are in the primary grades at the time of break up is due chiefly to the loss of a male model or due to the general instability of the home.

3. As the present study has attempted to examine the difference in performance between children from conflict broken homes and those broken by the death of one of the parents, a study is recommended to compare the performance of students from homes broken by each of the following: (a) divorce, (b) separation, (c) death, and (d) desertion.

4. With the increasing divorce rate and the decreasing death rate, the ratio of conflict broken homes to those broken due to the death of one of the parents is changing. It is recommended that any future research take this fact into consideration when comparing results of recent broken home investigations with those conducted earlier in the century.

5. A study is recommended which would determine to what extent high achievers from broken homes, because of the more disorganized atmosphere of their homes, seek an escape by turning to their studies.

6. A study is recommended in which broken home students from different socio-economic areas are compared. This could provide data for a comparison of the achievement of these different groups of students.

7. A similar study could be undertaken that would include the use of a battery of standardized personality tests which would yield more information about the differences in personality development among the groups of students.

8. A study is recommended to be carried out by guidance counsellors in which broken home children would be compared with children from intact homes as to the degree of field articulation and scanning that each group does. Such a study would provide more data for the comparison of these two groups.

9. It is suggested that studies be conducted in the field of disorganized homes to determine the following: (a) whom these children regard as their identification models, (b) the extent to which television and the movies supply models for these children to emulate, (c) the influence that older siblings have on the younger children, and (d) the influence working mothers have on the children in fatherless homes.

10. A longitudinal study is suggested which would examine the progress of the groups of students involved in this study. Such a study would reveal whether the same differences in performance continue between these groups as the children get older.

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APPENDIX A

1. NAME: _____ SCHOOL: _____
 Last First
 2. GRADE: _____ SEX: (circle) Boy Girl
 3. Father's Name _____ Mother's Name _____
 First First
 4. Father's Occupation: _____
 5. Mother's Occupation: _____
 6. Do you live with both of your parents? (circle) Yes No
 7. If you do NOT live with BOTH parents, please answer the following:
 - (a) I live with (check one) Mother only ____; Father only ____; Neither ____.
 - (b) Is one or both of them no longer living? _____
 - (c) Are they divorced, separated, or living apart?
 _____.
 - (d) When you first started to live with only one parent, you were (check one) (i) still not going to school ____; (ii) in grade 1, 2, or 3 ____; (iii) in grade 4, 5, or 6 ____; (iv) in grade 7 or 8 ____.
-

DIRECTIONS: In the following questions, mark your answer by putting a circle in the right place. For example, in the question "Does your family have a car?" draw a circle around the "Yes" if your family does have a car, and around the "No" if it does not. Be sure to answer all the questions.

1. Does your family own a car? . . . Yes No
2. Does your family have a garage or carport Yes No

- | | | | | | |
|-----|--|---|---|-----|----|
| 3. | Did your father go to high school? | . | . | Yes | No |
| 4. | Did your mother go to high school? | . | . | Yes | No |
| 5. | Did your father go to university? | . | . | Yes | No |
| 6. | Did your mother go to university? | . | . | Yes | No |
| 7. | Is there a writing desk in your home? | . | | Yes | No |
| 8. | Does your family have a Hi-Fi or record
player? | . | . | Yes | No |
| 9. | Does your family have a piano? | . | . | Yes | No |
| 10. | Does your family get a daily newspaper? | . | | Yes | No |
| 11. | Do you have your own room at home? | . | . | Yes | No |
| 12. | Does your family own its home? | . | . | Yes | No |
| 13. | Is there an encyclopedia in your home? | . | | Yes | No |
| 14. | Does your family have more than 100 hard-
cover books? (Four shelves 3ft. long?) | . | | Yes | No |
| 15. | Did your parents borrow any books from the
library in the last year? | . | . | Yes | No |
| 16. | Does your family leave town each year for
a holiday? | . | . | Yes | No |
| 17. | Do you belong to any club where you have
to pay fees? | . | . | Yes | No |
| 18. | Does your mother belong to any clubs or
organizations such as study, church, art,
or social clubs? | . | . | Yes | No |
| 19. | Does your father belong to any such clubs
or organizations? | . | . | Yes | No |
| 20. | Have you ever had lessons in music, dancing,
art, swimming, and so on, outside of
school? | . | . | Yes | No |

A P P E N D I X B

BEHAVIOR RATING

Instructions to Raters

Beside each name on the list of students, please check the appropriate space.

- Check under #1 if the student's behavior has been very unfavorable.

Examples: Open defiance of authority, sent to the administrator's office several times a year for poor behavior, had been temporarily suspended for poor behavior, or whose behavior had required police or court intervention.

- Check under #2 if the student's behavior, although still unfavorable, has been of a less serious nature.

Examples: Playing jokes on others, sent to the office on rare occasions,
 just starting to misbehave, or very withdrawn.

- Check under #3 if the student's behavior has been favorable or unknown.

[illegible]

APPENDIX

TABLE I

Summary of the results of the experiments on the effect of the concentration of the solution on the rate of the reaction.

The results of the experiments on the effect of the concentration of the solution on the rate of the reaction are given in Table I. The rate of the reaction was determined by measuring the volume of gas evolved at different times. The concentration of the solution was varied by adding different amounts of the reactants. The results show that the rate of the reaction increases with the concentration of the solution.

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The results show that the rate of the reaction increases with the concentration of the solution. The rate of the reaction was determined by measuring the volume of gas evolved at different times.

The rate of the reaction was determined by measuring the volume of gas evolved at different times. The concentration of the solution was varied by adding different amounts of the reactants.

Time (min)	Volume of gas evolved (ml)	Concentration of solution (M)
0	0	0.1
10	10	0.1
20	20	0.1
30	30	0.1
40	40	0.1
50	50	0.1
60	60	0.1
70	70	0.1
80	80	0.1
90	90	0.1

DEVIANT BEHAVIOR RATING BASED ON THE
GRADE VI CHARACTER SUMMARY IN
THE CUMULATIVE RECORD

Below are examples of descriptive statements of students and how these statements were rated:

1. Very Unfavorable (See Appendix B)
 - You can't turn your back on Jim.
 - A persistent trouble maker.
 - Bill rebels against authority.
2. Less Unfavorable
 - Barry enjoys playing tricks on people at times when he should be studying.
 - Bernice has little or no interest in her school work.
 - He indulges in excessive day dreaming.
3. Favorable
 - An excellent student.
 - Karen is well behaved and tries to please.
 - Larry has no problems in school.

A P P E N D I X D

PREDICTOR VECTORS EMPLOYED IN THIS STUDY

<u>Vector Number</u>	<u>Description</u>
1	= 1 if subject is from a broken home, zero otherwise.
2	= 1 if subject is male, zero otherwise.
3	= 1 if subject is female, zero otherwise.
4	= 1 if subject comes from a fatherless home, zero otherwise.
5	= 1 if subject comes from a motherless home, zero otherwise.
6	= 1 if subject does not live with either parent, zero otherwise.
7	= 1 if subject comes from a conflict broken home, zero otherwise.
8	= 1 if subject comes from a home broken by the death of a parent, zero otherwise.
9	= 1 if subject was pre-school when his home was broken, zero otherwise.
10	= 1 if subject was in grades 1 to 3 when his home was broken, zero otherwise.
11	= 1 if subject was in grades 4 to 6 when his home was broken, zero otherwise.
12	= co-variable socio-economic status index, a continuous vector.
13	= interaction of vectors 2 and 9)
14	= interaction of vectors 2 and 10)
15	= interaction of vectors 2 and 11)
16	= interaction of vectors 3 and 9)
17	= interaction of vectore 3 and 10)
18	= interaction of vectors 3 and 11)
	} — Interaction of sex X time of break up
19	= interaction of vectors 2 and 7)
20	= interaction of vectors 2 and 8)
21	= interaction of vectors 3 and 7)
22	= interaction of vectors 3 and 8)
	} — Interaction of sex X nature of break up

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